Maintenance data (fuel, oil level, etc.)

Dimensions and weights

Overall length		184.8 in. (4695 mm)
Overall width		70.3 in. (1785 mm)
Overall height*		59.3 in. (1505 mm)
Wheelbase		106.3 in. (2700 mm)
Tread	Front	60.4 in. (1535 mm)
	Rear	60.2 in. (1530 mm)
Vehicle capacity weight (Occupants + luggage)		825 lb. (375 kg)

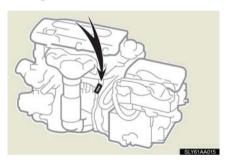
*: Unladen vehicles

Vehicle identification

Vehicle identification number

The vehicle identification number (VIN) is the legal identifier for your vehicle. This is the primary identification number for your Lexus. It is used in registering the ownership of your vehicle.

This number is stamped on the top left of the instrument panel and under the front passenger's seat (on some models).

This number is also on the Certification Label.

Engine number

The engine numbers is stamped on the engine block as shown.

Engine

Model	2AZ-FXE
Type	4-cylinder in line, 4-cycle, gasoline
Bore and stroke	3.48 × 3.78 in. (88.5 × 96.0 mm)
Displacement	144.1 cu.in. (2362 cm^3)
Drive belt tension	Automatic adjustment
Valve clearance (engine cold)	Intake: 0.007 — 0.011 in. (0.19 — 0.29 mm) Exhaust: 0.015 — 0.019 in. (0.38 — 0.48 mm)

Fuel

Fuel type	Unleaded gasoline only
Octane rating	87 (Research octane number 91) or higher
Fuel tank capacity (Reference)	14.5 gal. (55 L, 12.5 Imp. gal.)

Electric motor (Traction motor)

Type	Permanent magnet synchronous motor
Maximum output	105 kW
Maximum torque	199 ft•lbf (270 N•m, 27.5 kgf•m)

Hybrid battery (Traction battery)

Type	Nickel-metal hydride battery
Voltage	7.2 V/module
Capacity	6.5 Ah (3HR)
Quantity	34 modules
Overall voltage	244.8 V

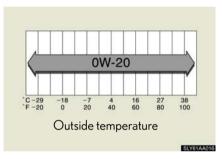
Lubrication system

Oil capacity (Drain and refill -reference) With filter Without filter	 4.5 qt. (4.3 L, 3.8 Imp.qt.) 4.3 qt. (4.1 L, 3.6 Imp.qt.)

■ Engine oil selection

"Toyota Genuine Motor Oil" is used in your Lexus vehicle. Use Lexus approved "Toyota Genuine Motor Oil" or equivalent to satisfy the following grade and viscosity.

Oil grade: ILSAC multigrade engine oil

Recommended viscosity: SAE 0W-20

SAE 0W-20 is the best choice for good fuel economy and good starting in cold weather.

If SAE 0W-20 is not available, SAE 5W-20 oil may be used. However, it must be replaced with SAE 0W-20 at the next oil change.

The 0W portion of the oil viscosity rating indicates the characteristic of the oil which allows cold startability. Oils with a lower value before the W allow for easier starting of the engine in cold weather.

The 20 in 0W-20 indicates the oil viscosity when the oil is at its operating temperature. An oil with a higher viscosity may be better suited if the vehicle is operated at high speeds, or under extreme load conditions.

How to read oil container label:

The ILSAC (International Lubricant Standardization and Approval Committee) Certification Mark is added to some oil containers to help you select the oil you should use.

Cooling system

Capacity Gasoline engine Power control unit	 7.7 qt. (7.3 L, 6.4 Imp. qt.) 3.1 qt. (2.9 L, 2.6 Imp. qt.)
Coolant type	Use either of the following. • "Toyota Super Long Life Coolant" • A similar high-quality ethylene glycol-based non-silicate, non-amine, non-nitrite, and non-borate coolant with long-life hybrid organic acid technology Do not use plain water alone.

Ignition system

Spark plug	
Make	DENSO SK20R11 NGK IFR6A11
Gap	0.043 in. (1.1 mm)

NOTICE

Iridium-tipped spark plugs

Use only iridium-tipped spark plugs. Do not adjust spark plug gap.

Electrical system

12-volt battery Open voltage* at 68°F (20°C):	12.6 — 12.8 V Fully charged 12.2 — 12.4 V Half charged 11.8 — 12.0 V Discharged (*: Voltage checked 20 minutes after the hybrid system and all the lights are turned off)
Charging rates	5 A max.

Hybrid transaxle

Fluid capacity *	4.4 qt. (4.2 L, 3.7 Imp. qt.)
Fluid type	Toyota Genuine ATF WS

*: The fluid capacity is a reference quantity. If replacement is necessary, contact your Lexus dealer.

NOTICE

Hybrid transaxle fluid type

Using hybrid transaxle fluid other than “Toyota Genuine ATF WS” may ultimately damage the hybrid transaxle of your vehicle.

Brakes

Pedal clearance *1 Vehicles without scuff lights Vehicles with scuff lights	 3.1 in. (78 mm) Min. 3.1 in. (80 mm) Min.
Pedal free play	0.04 — 0.24 in. (1 — 6 mm)
Brake pad wear limit	0.04 in. (1.0 mm)
Parking brake lining wear limit	0.04 in. (1.0 mm)
Parking brake pedal travel *2	8 — 11 clicks
Fluid type	SAE J1703 or FMVSS No.116 DOT 3

*1: Minimum pedal clearance when depressed with a force of 44 lbf (196 N, 20 kgf) while the hybrid system is running

*2: Parking brake pedal travel when depressed with a force of 67 lbf (300 N, 31 kgf)

Steering

Free play	Less than 1.2 in. (30 mm)

Tires and wheels

Type A

Tire size	P215/55R17 93V, T145/70D17 106M (spare)
Tire inflation pressure (recommended cold tire inflation pressure)	Driving under normal conditions Front: 33 psi (230 kPa, 2.3 kgf/cm^2 or bar) Rear: 33 psi (230 kPa, 2.3 kgf/cm^2 or bar) Spare: 60 psi (420 kPa, 4.2 kgf/cm^2 or bar)
Wheel size	17 × 7J, 17 × 4T (spare)
Wheel nut torque	76 ft•lbf (103 N•m, 10.5 kgf•m)

Type B

Tire size	P225/45R18 91W, T145/70D17 106M (spare)
Tire inflation pressure (recommended cold tire inflation pressure)	Driving under normal conditions Front: 33 psi (230 kPa, 2.3 kgf/cm^2 or bar) Rear: 32 psi (220 kPa, 2.2 kgf/cm^2 or bar) Spare: 60 psi (420 kPa, 4.2 kgf/cm^2 or bar)
Wheel size	18 × 7 1/2J, 17 × 4T (spare)
Wheel nut torque	76 ft•lbf (103 N•m, 10.5 kgf•m)

Light bulbs

	Light Bulbs	Bulb No.	W	Type
Exterior	LED headlights High beam Halogen headlights High beam Low beam	 9005 9005 H11	 60 60 55	 A A E
	Front side marker lights	W5W	5	C
	Front turn signal lights	3457NA	28/8	F
	Parking lights	W5W	5	C
	Front fog lights	H11	55	E
	Rear turn signal lights	WY21W	21	D
	Back-up lights	W16W	16	C
	License plate lights	W5W	5	C
	Outer foot lights	—	5	C
Interior	Vanity lights	—	8	C
	Front interior lights/Personal lights	—	8	C
	Rear interior light	—	8	B
	Trunk light	—	3.8	C
	Door courtesy lights	—	5	C

A: HB3 halogen bulbs
B: Double end bulbs
C: Wedge base bulbs (clear)
D: Wedge base bulbs (amber)
E: H11 halogen bulbs
F: Single end bulbs

Fuel information

You must only use unleaded gasoline in your vehicle.
Select octane rating 87 (Research Octane Number 91) or higher. Use of unleaded gasoline with an octane rating lower than 87 may result in engine knocking. Persistent knocking can lead to engine damage.

At minimum, the gasoline you use should meet the specifications of ASTM D4814 in the U.S.A. and CGSB3.5-M93 in Canada.

Fuel tank opening for unleaded gasoline

To help prevent incorrect fueling, your vehicle has a fuel tank opening that only accommodates the special nozzle on unleaded fuel pumps.

Gasoline quality

In very few cases, driveability problems may be caused by the brand of gasoline you are using. If driveability problems persist, try changing the brand of gasoline. If this does not correct the problem, consult your Lexus dealer.

Gasoline quality standards

- Automotive manufacturers in the U.S.A., Europe and Japan have developed a specification for fuel quality called the World-Wide Fuel Charter (WWFC), which is expected to be applied worldwide.
- The WWFC consists of four categories that are based on required emission levels. In the U.S., category 4 has been adopted.
- The WWFC improves air quality by lowering emissions in vehicle fleets, and improves customer satisfaction through better performance.

Recommendation of the use of gasoline containing detergent additives

- Lexus recommends the use of gasoline that contains detergent additives to avoid the build-up of engine deposits.
- All gasoline sold in the U.S.A. contains detergent additives to clean and/or keep clean intake systems.

- **Recommendation of the use of cleaner burning gasoline**

  Cleaner burning gasoline, including reformulated gasoline that contains oxygenates such as ethanol or MTBE (Methyl Tertiary Butyl Ether) is available in many areas.

  Lexus recommends the use of cleaner burning gasoline and appropriately blended reformulated gasoline. These types of gasoline provide excellent vehicle performance, reduce vehicle emissions and improve air quality.

- **Non-recommendation of the use of blended gasoline**
  - Lexus allows the use of oxygenate blended gasoline where the oxygenate content is up to 10% ethanol or 15% MTBE.
  - If you use gasohol in your vehicle, be sure that it has an octane rating no lower than 87.
  - Lexus does not recommend the use of gasoline containing methanol.

- **Non-recommendation of the use of gasoline containing MMT**

  Some gasoline contains an octane enhancing additive called MMT (Methylcyclopentadienyl Manganese Tricarbonyl).

  Lexus does not recommend the use of gasoline that contains MMT. If fuel containing MMT is used, your emission control system may be adversely affected.

  The malfunction indicator lamp on the instrument panel may come on. If this happens, contact your Lexus dealer for service.

- **If your engine knocks**
  - Consult your Lexus dealer.
  - You may occasionally notice light knocking for a short time while accelerating or driving uphill. This is normal and there is no need for concern.

NOTICE

Notice on fuel quality

- Do not use improper fuels. If improper fuels are used, the engine will be damaged.
- Do not use leaded gasoline.
  Leaded gasoline can cause damage to your vehicle's three-way catalytic converters causing the emission control system to malfunction.
- Do not use gasohol other than the type previously stated.
  Other gasohol may cause fuel system damage or vehicle performance problems.
- Using unleaded gasoline with an octane number or rating lower than the level previously stated will cause persistent heavy knocking.
  At worst, this will lead to engine damage.

Fuel-related poor driveability

If poor driveability is encountered after using a different type of fuel (poor hot starting, vaporization, engine knocking, etc.), discontinue the use of that type of fuel.

When refueling with gasohol

Take care not to spill gasohol. It can damage your vehicle's paint.

Tire information

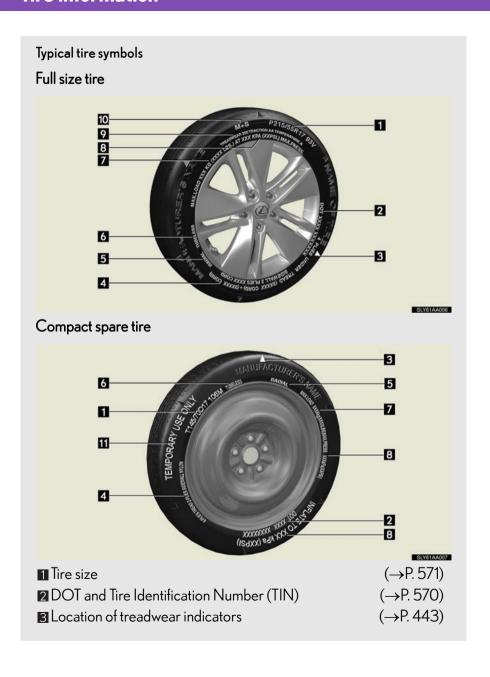
Typical tire symbols

Full size tire

Compact spare tire

1 Tire size (→P. 571)

2 DOT and Tire Identification Number (TIN) (→P. 570)

3 Location of treadwear indicators (→P. 443)

Tire ply composition and materials

Plies are layers of rubber-coated parallel cords. Cords are the strands which form the plies in a tire.

5 Radial tires or bias-ply tires

A radial tire has “RADIAL” on the sidewall. A tire not marked “RADIAL” is a bias-ply tire.

6 TUBELESS or TUBE TYPE

A tubeless tire does not have a tube and air is directly put into the tire. A tube type tire has a tube inside the tire and the tube maintains the air pressure.

7 Load limit at maximum cold tire inflation pressure (→P. 447)

8 Maximum cold tire inflation pressure (→P. 563)

This means the pressure to which a tire may be inflated.

9 Uniform tire quality grading

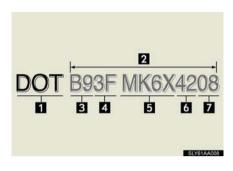
For details, see “Uniform Tire Quality Grading” that follows.

10 Summer tires or all season tires (→P. 447)

An all season tire has “M+S” on the sidewall. A tire not marked “M+S” is a summer tire.

11 “TEMPORARY USE ONLY” (→P. 532)

A compact spare tire is identified by the phrase “TEMPORARY USE ONLY” molded on its sidewall. This tire is designed for temporary emergency use only.

Typical DOT and Tire Identification Number (TIN)

1 DOT symbol*

2 Tire Identification Number (TIN)

3 Tire manufacturer's identification mark

4 Tire size code

5 Manufacturer's optional tire type code (3 or 4 letters)

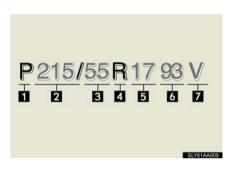
6 Manufacturing week

7 Manufacturing year

*: The DOT symbol certifies that the tire conforms to applicable Federal Motor Vehicle Safety Standards.

Tire size

Typical tire size information

The illustration indicates typical tire size.

1 Tire use
(P = Passenger car,
T = Temporary use)

2 Section width (millimeters)

3 Aspect ratio
(tire height to section width)

4 Tire construction code
(R = Radial, D = Diagonal)

5 Wheel diameter (inches)

6 Load index (2 digits or 3 digits)

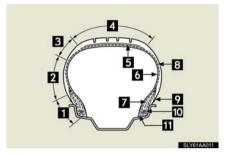
7 Speed symbol
(alphabet with one letter)

Tire dimensions

1 Section width

2 Tire height

3 Wheel diameter

Tire section names

1 Bead
2 Sidewall
3 Shoulder
4 Tread
5 Belt
6 Inner liner
7 Reinforcing rubber
8 Carcass
9 Rim lines
10 Bead wires
11 Chafer

Uniform Tire Quality Grading

This information has been prepared in accordance with regulations issued by the National Highway Traffic Safety Administration of the U.S. Department of Transportation.
It provides the purchasers and/or prospective purchasers of Lexus vehicles with information on uniform tire quality grading.

Your Lexus dealer will help answer any questions you may have as you read this information.

DOT quality grades

All passenger vehicle tires must conform to Federal Safety Requirements in addition to these grades. Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width.

For example: Treadwear 200 Traction AA Temperature A

■ Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course.

For example, a tire graded 150 would wear one and a half (1 - 1/2) times as well on the government course as a tire graded 100.
The relative performance of tires depends upon the actual conditions of their use. Performance may differ significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

■ Traction AA, A, B, C

The traction grades, from highest to lowest, are AA, A, B and C, and they represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete.

A tire marked C may have poor traction performance.

Warning: The traction grade assigned to this tire is based on braking (straight ahead) traction tests and does not include cornering (turning) traction.

■ Temperature A, B, C

The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel.

Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure.

Grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 109.

Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

Warning: The temperature grades of a tire assume that it is properly inflated and not overloaded.
Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

Glossary of tire terminology

Tire related term	Meaning
Cold tire inflation pressure	Tire pressure when the vehicle has been parked for three hours or more, or has not been driven more than 1 mile or 1.5 km under that condition
Maximum inflation pressure	The maximum cold inflated pressure to which a tire may be inflated, shown on the sidewall of the tire
Recommended inflation pressure	Cold tire inflation pressure recommended by a manufacturer
Accessory weight	The combined weight (in excess of those standard items which may be replaced) of transmission, power steering, power brakes, power windows, power seats, radio and heater, to the extent that these items are available as factory-installed equipment (whether installed or not)
Curb weight	The weight of a motor vehicle with standard equipment, including the maximum capacity of fuel, oil and coolant, and if so equipped, air conditioning and additional weight optional engine
Maximum loaded vehicle weight	The sum of: (a) Curb weight (b) Accessory weight (c) Vehicle capacity weight (d) Production options weight
Normal occupant weight	150 lb. (68 kg) times the number of occupants specified in the second column of Table 1* that follows

Tire related term	Meaning
Occupant distribution	Distribution of occupants in a vehicle as specified in the third column of Table 1* below
Production options weight	The combined weight of installed regular production options weighing over 5 lb. (2.3 kg) in excess of the standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim
Rim	A metal support for a tire or a tire and tube assembly upon which the tire beads are seated
Rim diameter (Wheel diameter)	Nominal diameter of the bead seat
Rim size designation	Rim diameter and width
Rim type designation	The industry manufacturer's designation for a rim by style or code
Rim width	Nominal distance between rim flanges
Vehicle capacity weight (Total load capacity)	The rated cargo and luggage load plus 150 lb. (68 kg) times the vehicle's designated seating capacity
Vehicle maximum load on the tire	The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight, and dividing by two
Vehicle normal load on the tire	The load on an individual tire that is determined by distributing to each axle its share of curb weight, accessory weight, and normal occupant weight (distributed in accordance with Table 1* below), and dividing by two
Weather side	The surface area of the rim not covered by the inflated tire

Tire related term	Meaning
Bead	The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim
Bead separation	A breakdown of the bond between components in the bead
Bias ply tire	A pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread
Carcass	The tire structure, except tread and sidewall rubber which, when inflated, bears the load
Chunking	The breaking away of pieces of the tread or sidewall
Cord	The strands forming the plies in the tire
Cord separation	The parting of cords from adjacent rubber compounds
Cracking	Any parting within the tread, sidewall, or innerliner of the tire extending to cord material
CT	A pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire
Extra load tire	A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire
Groove	The space between two adjacent tread ribs
Innerliner	The layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire
Innerliner separation	The parting of the innerliner from cord material in the carcass

Tire related term	Meaning
Intended outboard side-wall	(a) The sidewall that contains a whitewall, bears white lettering, or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same molding on the other side-wall of the tire, or (b) The outward facing sidewall of an asymmetrical tire that has a particular side that must always face outward when mounted on a vehicle
Light truck (LT) tire	A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipur-pose passenger vehicles
Load rating	The maximum load that a tire is rated to carry for a given inflation pressure
Maximum load rating	The load rating for a tire at the maximum permissible inflation pressure for that tire
Maximum permissible inflation pressure	The maximum cold inflation pressure to which a tire may be inflated
Measuring rim	The rim on which a tire is fitted for physical dimension requirements
Open splice	Any parting at any junction of tread, sidewall, or innerliner that extends to cord material
Outer diameter	The overall diameter of an inflated new tire
Overall width	The linear distance between the exteriors of the side-walls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs
Passenger car tire	A tire intended for use on passenger cars, multipur-pose passenger vehicles, and trucks, that have a gross vehicle weight rating (GVWR) of 10,000 lb. or less.
Ply	A layer of rubber-coated parallel cords

Tire related term	Meaning
Ply separation	A parting of rubber compound between adjacent plies
Pneumatic tire	A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load
Radial ply tire	A pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread
Reinforced tire	A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire
Section width	The linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands
Sidewall	That portion of a tire between the tread and bead
Sidewall separation	The parting of the rubber compound from the cord material in the sidewall
Snow tire	A tire that attains a traction index equal to or greater than 110, compared to the ASTM E-1136 Standard Reference Test Tire, when using the snow traction test as described in ASTM F-1805-00, Standard Test Method for Single Wheel Driving Traction in a Straight Line on Snow-and Ice-Covered Surfaces, and which is marked with an Alpine Symbol ( ) on at least one sidewall
Test rim	The rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire
Tread	That portion of a tire that comes into contact with the road

Tire related term	Meaning
Tread rib	A tread section running circumferentially around a tire
Tread separation	Pulling away of the tread from the tire carcass
Treadwear indicators (TWI)	The projections within the principal grooves designed to give a visual indication of the degrees of wear of the tread
Wheel-holding fixture	The fixture used to hold the wheel and tire assembly securely during testing

*: Table 1 — Occupant loading and distribution for vehicle normal load for various designated seating capacities

Designated seating capacity, Number of occupants	Vehicle normal load, Number of occupants	Occupant distribution in a normally loaded vehicle
2 through 4	2	2 in front
5 through 10	3	2 in front, 1 in second seat
11 through 15	5	2 in front, 1 in second seat, 1 in third seat, 1 in fourth seat
16 through 20	7	2 in front, 2 in second seat, 2 in third seat, 1 in fourth seat